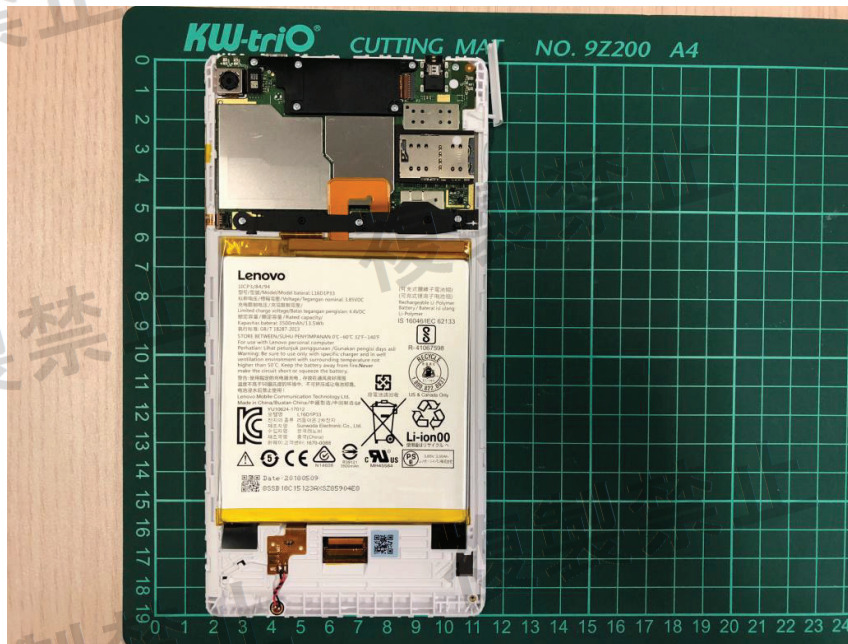
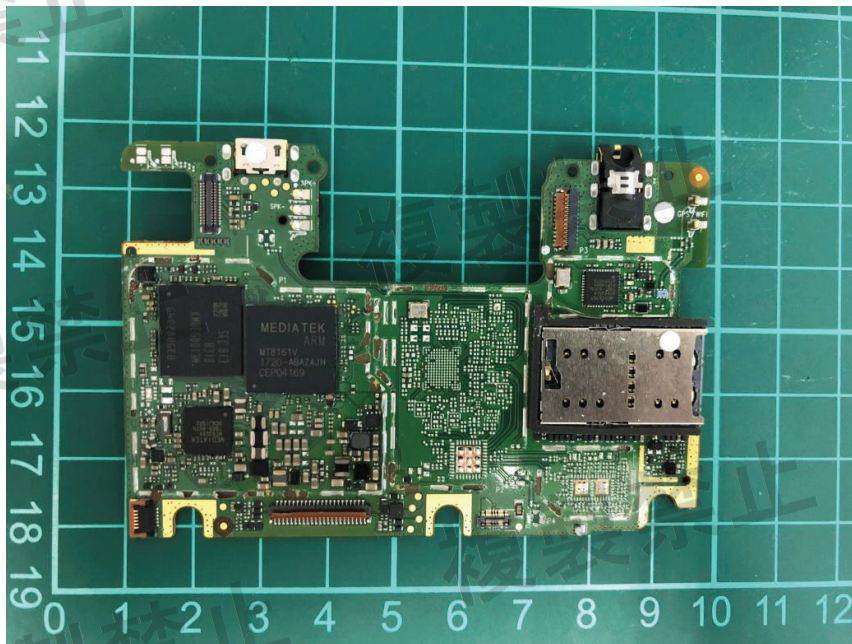




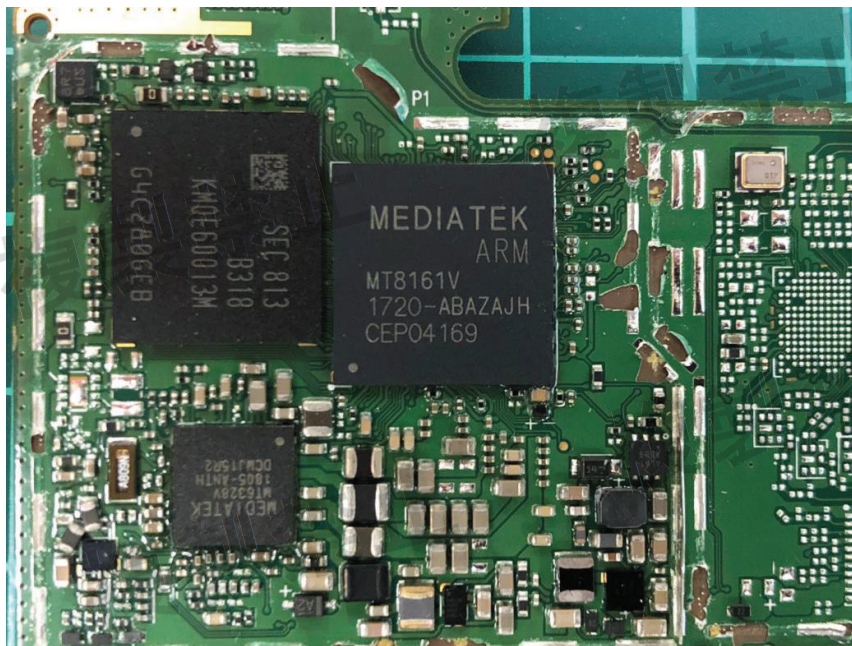
Pic A-7 The EUT Disassembly



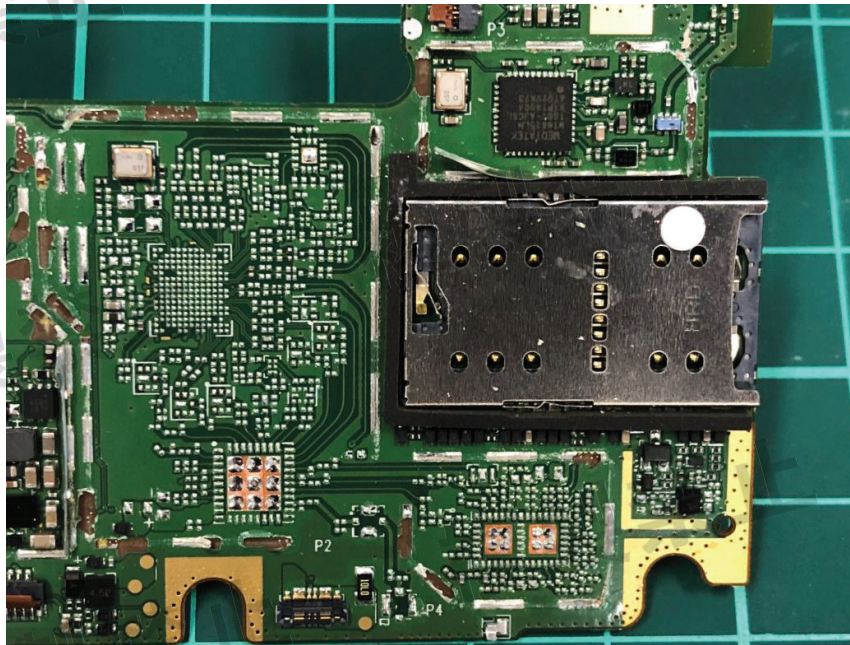
Pic A-8 The EUT Disassembly



Pic A-9 The EUT Disassembly



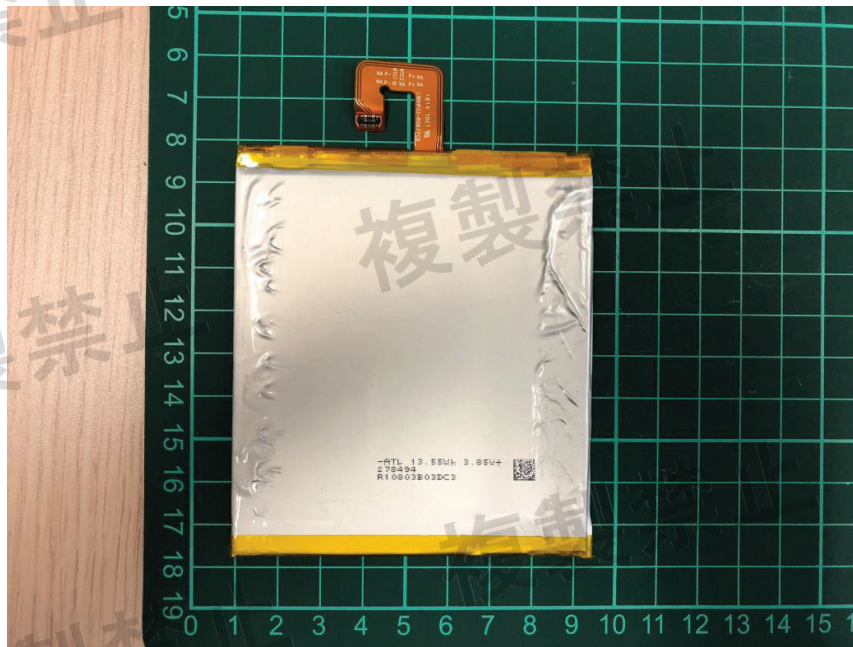
Pic A-10 The EUT Disassembly



Pic A-11 The EUT Disassembly



Pic A-12 The AE1



Pic A-13 The AE1

ANNEX B: Detailed Test Results

B.1. Antenna power

B.1.1. Conducted Measurements of RF output power

For conducted measurements of RF output power, the EUT shall be connected to the test system as Fig.B.1.1.1 and Fig.B.1.1.2 shows.

For conducted measurements of power spectral density, occupied channel bandwidth, transmitter unwanted emissions, receiver spurious emissions, the EUT shall be connected to the test system as Fig.B.1.1.1 shows.

Set the EUT to the required operation mode with the worse case modulation scheme.

Set the EUT to the required channel and bandwidth.



Figure B.1.1.1. Test Setup for Conducted Measurements of Power Spectral Density, Occupied Channel Bandwidth, Transmitter unwanted emissions, Receiver spurious emissions

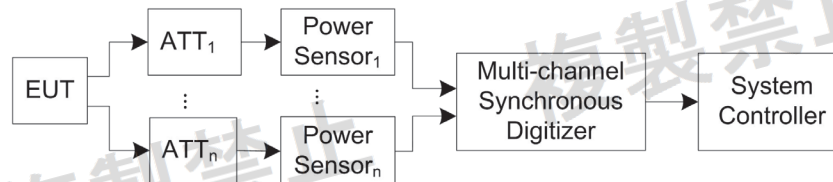


Figure B.1.1.2. Test Setup for Conducted Measurements of RF output(Multi antenna)

B.1.2 Test method of antenna power

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to $RBW = 1\text{MHz}$.
- Set the VBW = 3MHz .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

B.1.3 Limit of antenna power

Measurement Limit

Standard	Limit (mw)
ARIS STD-T66 Version 3.6 3.2 (2)	Antenna power shall be 10mW or less.
	(1) If the transmission device occupies a frequency bandwidth of at most 26MHz, that it be at most 10mW/MHz.
	(2) If the transmission device occupies a frequency bandwidth of over 26MHz but at most 38MHz, that it be at most 5mW/MHz.

B.1.4 Test results of antenna power

802.11b

Channel rate	1Mbps (mw/ MHz)	2Mbps (mw/ MHz)	5.5Mbps (mw/ MHz)	11Mbps (mw/ MHz)
1	5.09	5.01	4.89	4.70
7	5.25	/	/	/
13	4.72	/	/	/

802.11g

Channel \ rate	6Mbps (mw/ MHz)	9Mbps (mw/ MHz)	12Mbps (mw/ MHz)	18Mbps (mw/ MHz)	24Mbps (mw/ MHz)	36Mbps (mw/ MHz)	48Mbps (mw/ MHz)	54Mbps (mw/ MHz)
1	2.03	1.30	2.05	2.16	1.30	1.29	2.05	2.10
7	/	/	/	2.29	/	/	/	/
13	/	/	/	2.04	/	/	/	/

802.11n-20HT

Channel \ rate	MCS0 (mw/ MHz)	MCS1 (mw/ MHz)	MCS2 (mw/ MHz)	MCS3 (mw/ MHz)	MCS4 (mw/ MHz)	MCS5 (mw/ MHz)	MCS6 (mw/ MHz)	MCS7 (mw/ MHz)
1	1.69	1.65	1.70	1.68	1.69	1.73	1.83	1.75
7	/	/	/	/	/	/	1.90	/
13	/	/	/	/	/	/	1.65	/

802.11n-40HT

Channel \ rate	MCS0 (mw/ MHz)	MCS1 (mw/ MHz)	MCS2 (mw/ MHz)	MCS3 (mw/ MHz)	MCS4 (mw/ MHz)	MCS5 (mw/ MHz)	MCS6 (mw/ MHz)	MCS7 (mw/ MHz)
3	0.30	0.32	0.32	0.32	0.33	0.30	0.31	0.31
7	/	/	/	/	0.35	/	/	/
11	/	/	/	/	0.31	/	/	/

**Conclusion: Pass**

The following data rate are selected as the worst condition; as the maximum power is got with these data rate. The following cases are performed with this condition.

802.11b mode	802.11g mode	802.11n-HT20 mode	802.11n-HT40 mode
1Mbps	18Mbps	MCS6	MCS4

B.1.5 Allowable deviations in antenna power**802.11b**

Environmental condition	25 deg.C 65% RH			
Test condition	CONDUCTED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	5.09	5.25	4.72	10
V+10%	5.09	5.61	4.91	10
V-10%	5.22	5.52	4.77	10
Rated power	6.20	6.20	6.20	10
TOLERANCE OF ANTENNA POWER	1.24~7.44			

Radiated RF output power density (the antenna gain is -0.9dBi)

Environmental condition	25 deg.C 65% RH			
Test condition	RADIATED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	4.19	4.35	3.82	8.13
V+10%	4.19	4.71	4.01	8.13
V-10%	4.32	4.62	3.87	8.13

802.11g

Environmental condition	25 deg.C 65% RH			
Test condition	CONDUCTED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	2.16	2.29	2.04	10
V+10%	2.21	2.37	2.09	10
V-10%	2.25	2.38	2.09	10
Rated power	2.20	2.20	2.20	10
TOLERANCE OF ANTENNA POWER	0.44~2.64			

Radiated RF output power density (the antenna gain is -0.9dBi)



Environmental condition	25 deg.C 65% RH			
Test condition	RADIATED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	1.26	1.39	1.14	8.13
V+10%	1.31	1.47	1.19	8.13
V-10%	1.35	1.48	1.19	8.13

802.11n-20HT

Environmental condition	25 deg.C 65% RH			
Test condition	CONDUCTED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	1.83	1.90	1.65	10
V+10%	1.81	2.02	1.72	10
V-10%	1.79	2.04	1.73	10
Rated power	2.10	2.10	2.10	10
TOLERANCE OF ANTENNA POWER	0.42~2.52			

Radiated RF output power density (the antenna gain is -0.9dBi)

Environmental condition	25 deg.C 65% RH			
Test condition	RADIATED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	0.93	1.00	0.75	8.13
V+10%	0.91	1.12	0.82	8.13
V-10%	0.89	1.14	0.83	8.13

802.11n-40HT

Environmental condition	25 deg.C 65% RH			
Test condition	CONDUCTED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(cha13)	Limit (mw/ MHz)
Vnormal	0.33	0.35	0.31	3.16
V+10%	0.33	0.35	0.33	3.16
V-10%	0.32	0.36	0.34	3.16
Rated power	0.50	0.50	0.50	3.16
TOLERANCE OF ANTENNA POWER	0.10~0.60			

Radiated RF output power density (the antenna gain is -0.9dBi)

Environmental	25 deg.C 65% RH			
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condition				
Test condition	RADIATED RF OUTPUT POWER DENSITY (mw/ MHz)			
	2412MHz(ch1)	2442MHz(ch7)	2472MHz(ch13)	Limit (mw/ MHz)
Vnormal	-0.57	-0.55	-0.59	2.57
V+10%	-0.57	-0.55	-0.57	2.57
V-10%	-0.58	-0.54	-0.56	2.57

NOTE: 1. The radiated RF output power density is a “calculated” value derived from the conducted value.

2. Formula: Radiated RF output power density = Conducted RF output power density + Antenna Gain

According article 49.20 f(2)The angular width of the principal radiation in the horizontal and vertical planes of the transmitting antenna shall not exceed the value obtained by the following expression. $360/A$ degree A represents the value determined by dividing an equivalent isotropically radiated power by the value obtained by applying an antenna power with the mean power of 10 mW to the transmitting antenna with its absolute gain being -0.9dBi, and shall be 1 when it is lower than 1

B.2 Allowable deviations in frequency

B.2.1 Test conditions

The test connection diagram for other types of Wide Band modulation is given by Fig B1.1.1.

B.2.2 Test limits

Deviations must be within $\pm 50 \times 10^{-6}$.

B.2.3 Test method

This method is an alternative to the above method in case the UUT cannot be operated in an un-modulated mode.

The UUT shall be connected to spectrum analyser.

Max Hold shall be selected and the centre frequency adjusted to that of the UUT.

The peak value of the power envelope shall be measured and noted. The span shall be reduced and the marker moved in a positive frequency increment until the upper, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f1.

The marker shall then be moved in a negative frequency increment until the lower, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f2.

The centre frequency is calculated as $(f1 + f2) / 2$.

B.2.4 Test results

Mode	Channel	Allowable deviations in frequency(MHz)		Conclusion
802.11b	1	Fig.B.2.1	0.02	P
	7	Fig.B.2.2	0.02	P
	13	Fig.B.2.3	0.00	P
802.11g	1	Fig.B.2.4	0.02	P
	7	Fig.B.2.5	0.02	P
	13	Fig.B.2.6	0.01	P
802.11n-HT20	1	Fig.B.2.7	0.01	P
	7	Fig.B.2.8	0.01	P
	13	Fig.B.2.9	0.02	P
802.11n-HT40	3	Fig.B.2.10	0.01	P
	7	Fig.B.2.11	0.02	P
	11	Fig.B.2.12	0.02	P

Conclusion: Pass

Test graphs as below:

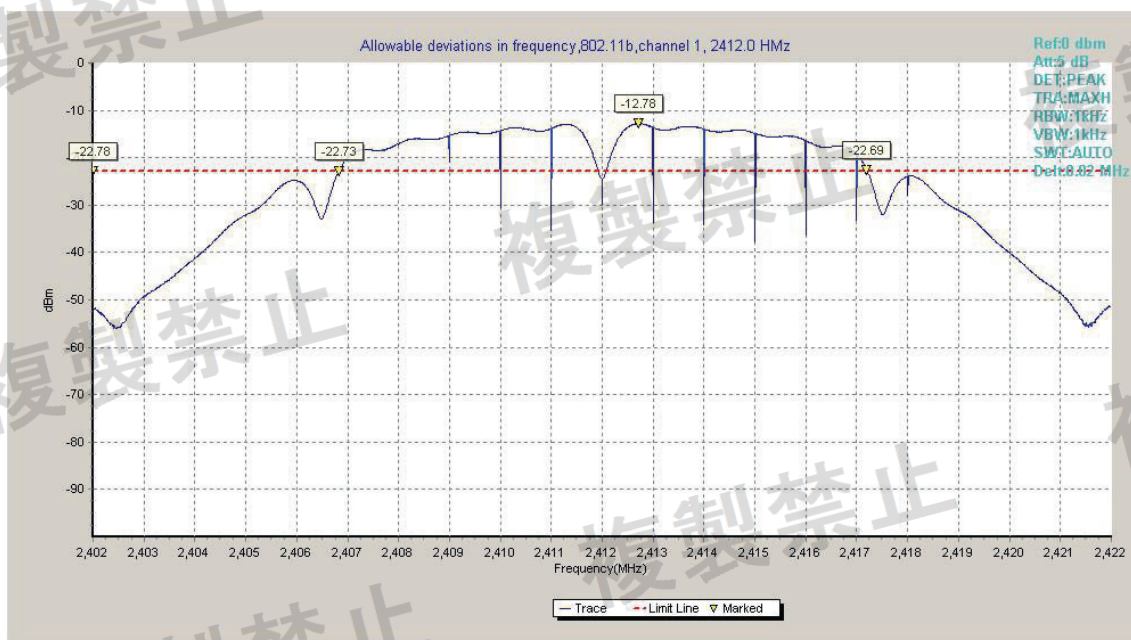


Fig.B.2.1 Allowable deviations in frequency (802.11b, Ch 1)

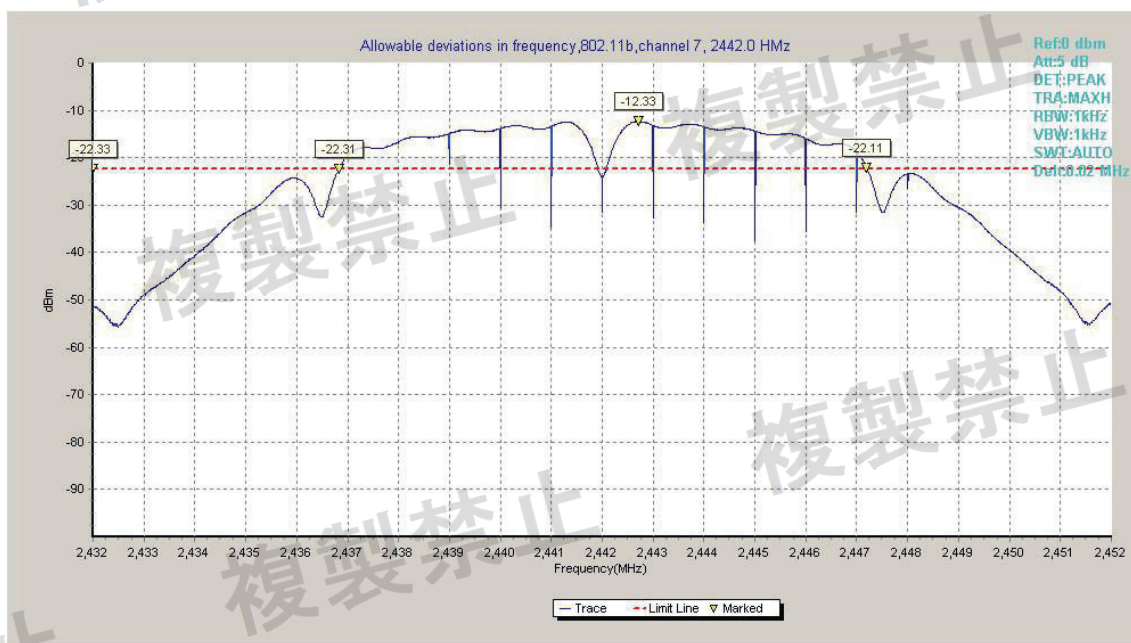


Fig.B.2.2 Allowable deviations in frequency (802.11b Ch 7)

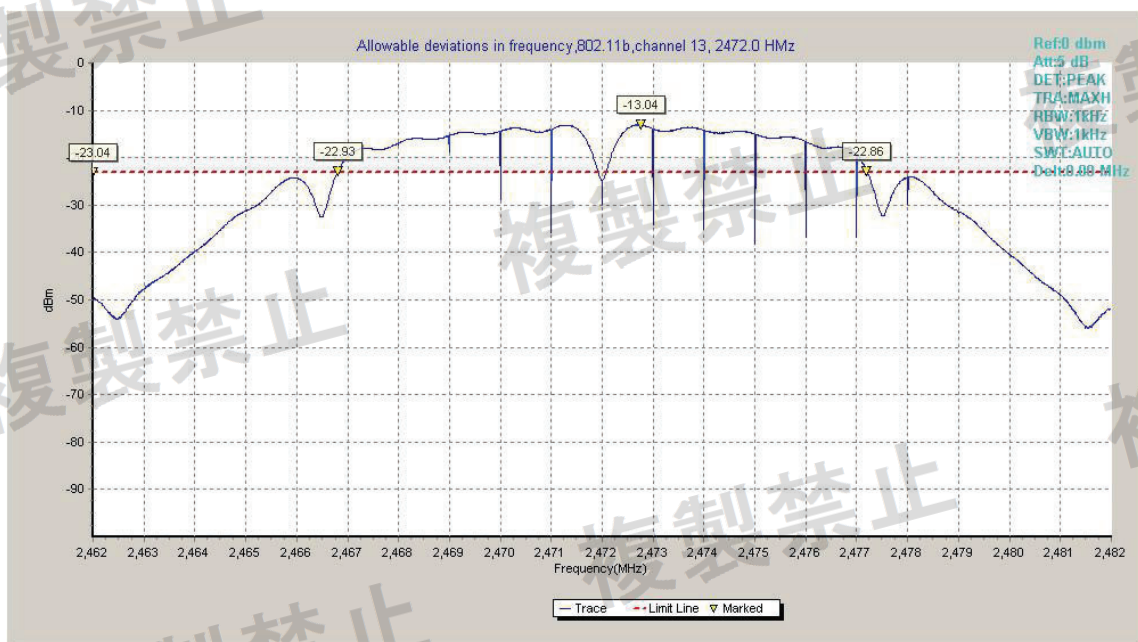


Fig.B.2.3 Allowable deviations in frequency (802.11b, Ch 13)

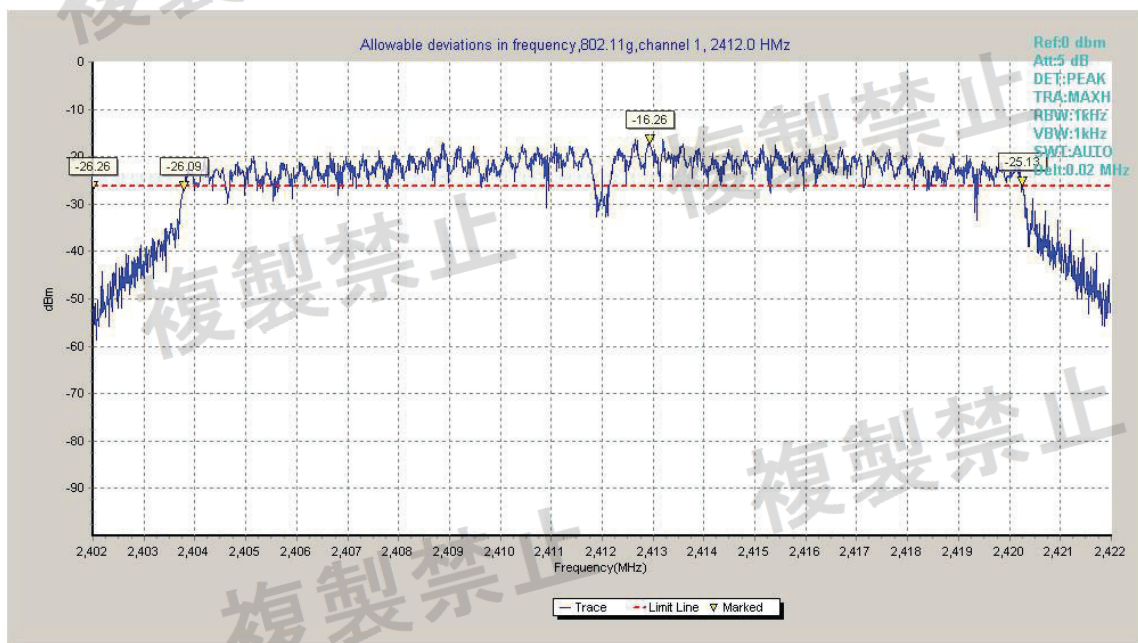


Fig.B.2.4 Allowable deviations in frequency (802.11g, Ch 1)

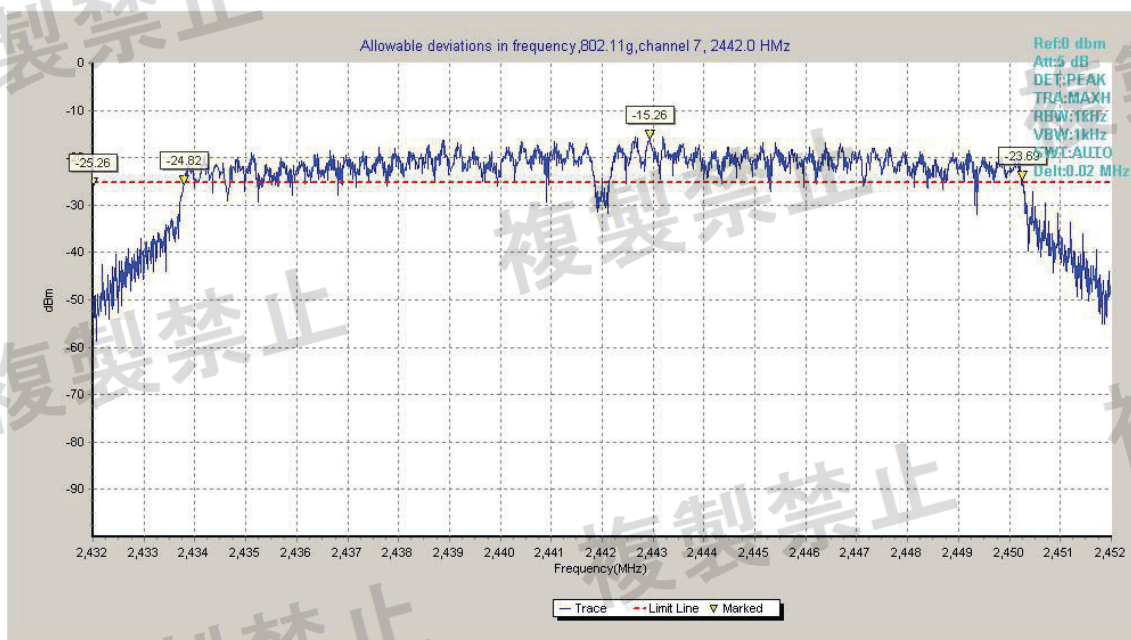


Fig.B.2.5 Allowable deviations in frequency (802.11g, Ch 7)

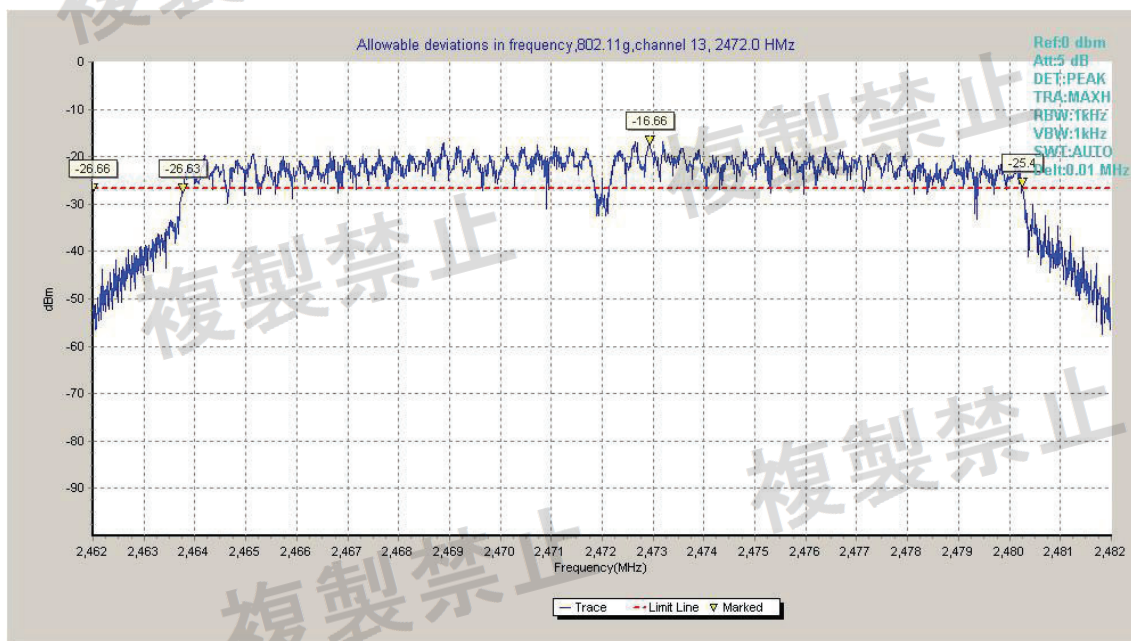


Fig.B.2.6 Allowable deviations in frequency (802.11g, Ch 13)

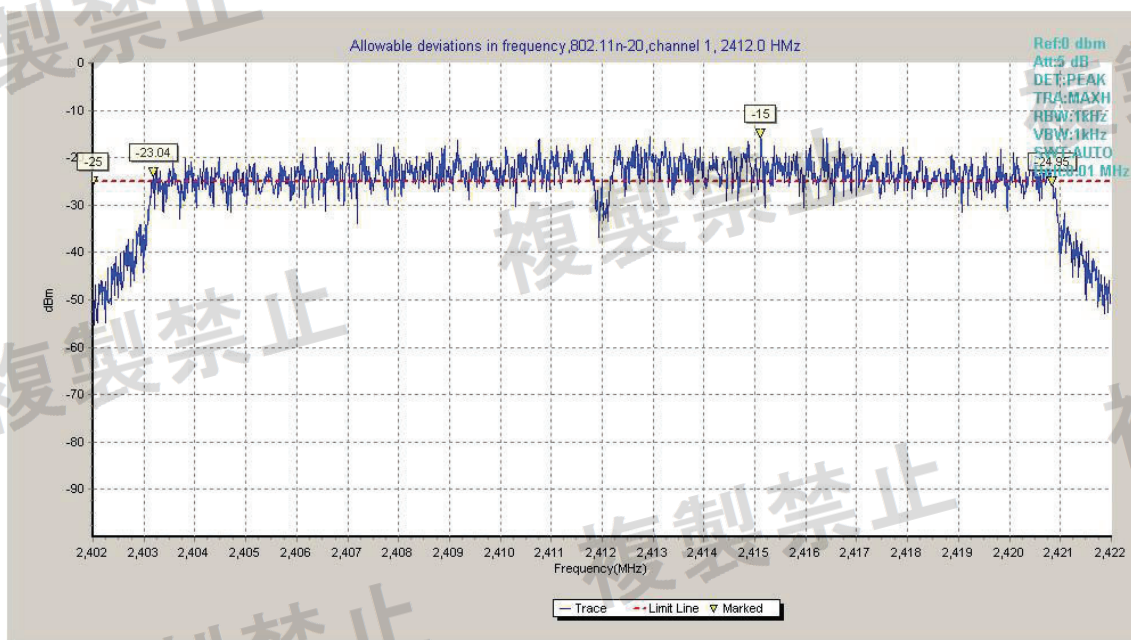


Fig.B.2.7 Allowable deviations in frequency (802.11n-HT20, Ch 1)

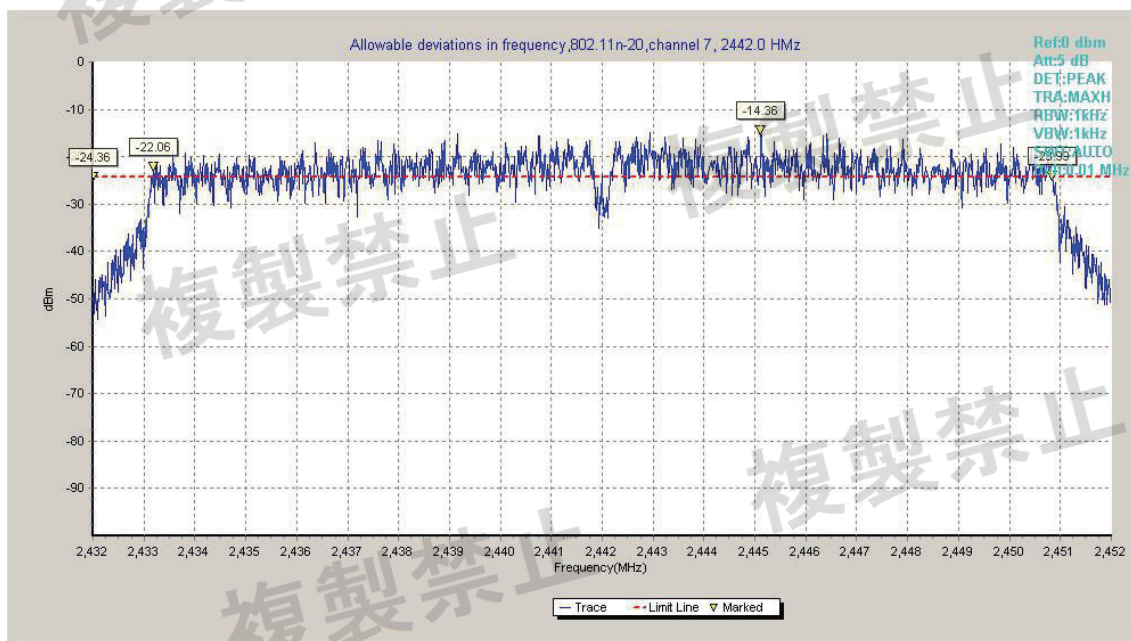


Fig.B.2.8 Allowable deviations in frequency (802.11n-HT20, Ch 7)